

ABSTRACT OF THE DISCLOSURE

A unique method has been developed which can show the
5 presence of fractures in an Earth formation as a mappable
attribute. This method uses the frequency spectra derived
from P-wave seismic data over a pair of specific time
windows above and below a seismic horizon or reflector of
interest to infer the presence or absence of these geologic
10 fractures based on an attenuation of high frequencies. The
method produces a parameter value (t^*) which is proportional
to the shift in frequency spectra amplitudes (i.e., energy)
from higher frequencies to lower frequencies, that is, from
a time-window above a horizon or reflector of interest to a
15 time-window below the horizon or reflector of interest.